## REMARKS

This is a full and timely response to the final Office Action (Paper No. 6) mailed by the U.S. Patent and Trademark Office on September 17, 2002. Claims 1, 3-8, 10, 11 and 13-15 remain pending in the present application. Independent claims 1, 7 and 11 have been amended to define further the invention. In view of the foregoing amendment and following remarks, reconsideration and allowance of the present application and claims are respectfully requested.

### Rejections Under 35 U.S.C. §102

Claims 1, 3-8, 10-11 and 13-15 stand rejected under 35 U.S.C. §102(b) as allegedly being anticipated by U.S. Patent No. 5,969,835 to Kamieniecki *et al.* A proper rejection of a claim under 35 U.S.C. §102 requires that a single prior art reference disclose each element of the claim. *See, e.g., W.L. Gore & Assoc., Inc. v. Garlock, Inc.*, 721 F.2d 1540, 220 USPQ 303, 313 (Fed. Cir. 1983). Anticipation requires that each and every element of the claimed invention be disclosed in a single prior art reference. *See e.g., In re Paulsen,* 30 F.3d 1475, 31 USPQ 2d 1671 (Fed. Cir. 1994); *In re Spada*, 911 F.2d 705, 15 USPQ 2d 1655 (Fed. Cir. 1990). Alternatively, anticipation requires that each and every element of the claimed invention be embodied in a single prior art device or practice. *See, e.g., Minnesota Min. & Mfg. Co. v. Johnson & Johnson Orthopedics, Inc.*, 976 F.2d 1559, 24 USPQ 2d 1321 (Fed. Cir. 1992). The test is the same for a process. Anticipation requires identity of the claimed process and a process of the prior art. The claimed process, including each step thereof, must have been described or embodied, either expressly or inherently, in a single reference. *See, e.g., Glaverbel S.A. v. Northlake Mkt'g & Supp., Inc.*, 45 F.3d 1550, 33 USPQ 2d 1496

(Fed. Cir. 1995). Those elements must either be inherent or disclosed expressly. *See, e.g., Constant v. Advanced Micro-Devices, Inc.*, 848 F.2d 1560, 7 USPQ 2d 1057 (Fed. Cir. 1988); *Verdegaal Bros., Inc. v. Union Oil Co.*, 814 F.2d 628, 2 USPQ 2d 1051 (Fed. Cir. 1987). Those elements must also be arranged as in the claim. *See, e.g., Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 9 USPQ 2d 1913 (Fed. Cir. 1989); *Carella v. Starlight Archery & Pro Line Co.*, 804 F.2d 135, 231 USPQ 644 (Fed. Cir. 1986). For anticipation, there must be no difference between the claimed invention and the reference disclosure, as viewed by a person of ordinary skill in the field of the invention. *See, e.g., Scripps Clinic & Res. Found. v. Genentech, Inc.*, 927 F.2d 1565, 18 USPQ 2d 1001 (Fed. Cir. 1991.)

Accordingly, the single prior art reference must properly disclose, teach or suggest each element of the claimed invention.

It is alleged in the Office Action that:

> Kamieniecki et al. disclose an automated signal generator apparatus which allows ***testing of remotely-controlled electronic devices*** to verify functionality and reliability, or for product set-up, initialization or configuration. The apparatus simulates a person pressing the keys on a remote control key pad, and can simulate key press sequences, key press duration, and time between key presses. Other human interfaces may also be simulated. The apparatus can be continuously driven by an external computer in a slaved mode, or can store test instructions in an internal memory to operate in a standalone mode. Test instructions, which may be written in a macro script language, are processed by a microprocessor to provide a control signal to, e.g., an infrared (IR) transmitter. The IR transmitter can control one or more electronic devices which are under test. The transmitter may use a wide angle IR beam, or a plurality of separate transmitters for testing of a plurality of electronic devices at the same time. In a human learning mode, control signals from a human interface are processed to provide time compression or repetition of a fixed control sequence.

In particular, Kamieniecki et al. disclose:

- connecting the DUT to a testing device (fig. 1; col. 2, lines 20-28; col. 3, lines 28-35; col. 4, lines 7-63; col. 5, line 47 to col. 6, line 62; col. 7, lines 16-40; col. 9, line 54 to col. 10, line 13);
- connecting a remote controlling device to the testing device (fig. 1; col. 2, lines 20-28; col. 3, lines 28-35; col. 4, lines 7-63; col. 5, line 47 to col. 6, line 62; col. 7, lines 16-40; col. 9, line 54 to col. 10, line 13);
- connecting a communications line (fig. 1 [# 125, 170]; col. 2, lines 20-28; col. 3, lines 28-35; col. 4, lines 7-63; col. 5, line 47 to col. 6, line 62; col. 7, lines 16-40; col. 9, line 54 to col. 10, line 13);
- using a video camera (col. 7, lines 27-40);
- establishing a communications link between remote controller and remote controlling device (fig. 1; col. 2, lines 20-28; col. 3, lines 28-35; col. 4, lines 7-63; col. 5, line 47 to col. 6, line 62; col. 7, lines 16-40; col. 9, line 54 to col. 10, line 13);
- transmitting DUT data to remote controller (fig. 1 [# 180]; col. 2, lines 20-28; col. 3, lines 28-35; col. 4, lines 7-63; col. 5, line 47 to col. 6, line 62; col. 7, lines 16-40; col. 9, line 54 to col. 10, line 13);
- controlling testing device using input from remote controller (fig. 1; col. 2, lines 20-28; col. 3, lines 28-35; col. 4, lines 7-63; col. 5, line 47 to col. 6, line 62; col. 7, lines 16-40; col. 9, line 54 to col. 10, line 13);
- initializing, establishing and transmitting data/attribute of DUT (fig. 1; col. 2, lines 20-28; col. 3, lines 28-35; col. 4, lines 7-63; col. 5, line 47 to col. 6, line 62; col. 7, lines 16-40; col. 9, line 54 to col. 10, line 13);
- forwarding instructions to remote controller and forwarding to testing device (fig. 1 [# 180]; col. 2, lines 20-28; col. 3, lines 28-35; col. 4, lines 7-63; col. 5, line 47 to col. 6, line 62; col. 7, lines 16-40; col. 9, line 54 to col. 10, line 13);

(Emphasis in Original)

As mentioned in the previous response, *Kamieniecki et al.* appears to disclose an automated test signal generator apparatus that allows testing of remotely controlled electronic devices to verify functionality and reliability. *See* Abstract. *Kamieniecki et al.* appears to include a signal generator 100 that translates or converts test instructions to an electronic control signal which is received by an infrared (IR) transmitter 110. The IR transmitter 110 may emit a wide angle beam with sufficient power to be detected by each

of a number of devices under test (DUTs) that are designed to receive the infrared signal. *See* column 5, lines 66 through column 6, line 3. *Kamieniecki et al.* appears to disclose a test apparatus in which testing of the functionality and reliability of an IR controlled electronic device is performed. The IR testing apparatus apparently simulates human key presses on an IR remote control, and determines the reliability of an IR receiver that detects the key presses.

In marked contrast to *Kamieniecki et al.*, the present invention discloses a method and apparatus for remote control of a testing device that is connected to a device under test (DUT). The method and apparatus includes a video camera focused on the connections between the test and measurement device and the device under test. The video camera is coupled to a remotely located call center, which includes a remote control device that is operated by, for example, a test technician. The video camera collects information relating to the connectivity between the test and measurement device and the DUT. The video camera sends this video information from a remote analysis tool kit 30, of which the video camera forms a component, over a network 16 to the remote controller 13. The system also electronically obtains model identification information of the test and measurement device and the DUT. The model identification information is then forwarded to a call center at which a test technician is located. The test technician uses the model information and the video information, which includes the connectivity between the device under test and the testing device, to remotely control the testing device. At least these features of the invention is neither disclosed, taught, nor suggested by *Kamieniecki et al.*

Specifically, and with particular regard to the claims, claim 1 includes the steps of "establishing a model of the testing device by electronically obtaining model information

from the device under test and the testing device" and "transmitting an image of the testing device connections and the model information to the remote controller for analysis." Similarly, independent claim 7 includes "a third programmable logic to establish a model of the testing device by electronically obtaining model information from the device under test and the testing device," and "a transceiver for transmitting an image of the testing device connections and the model information to the remote controller for analysis." Similarly, independent claim 11 includes "means for establishing a model of the testing device by electronically obtaining model information from the device under test and the testing device," and "means for transmitting an image of the testing device connections and the model information to the remote controller for analysis." Applicants respectfully submit that at least these features of establishing a model of the testing device by electronically obtaining model information from the device under test and the testing device, and transmitting an image of the testing device connections and the model information to the remote controller for analysis are neither disclosed, taught, nor suggested by *Kamieniecki et al.*

Accordingly, Applicants respectfully submit that independent claims 1, 7 and 11 are allowable over *Kamieniecki et al.* because *Kamieniecki et al.* fails to disclose each element of those independent claims. Further, Applicants respectfully submit that dependent claims 3-6, 8, 10, and 13-15 are allowable for at least the reason that they depend from allowable independent claims. *In re Fine*, 837 F.2d 1071, 5 USPQ 2d 1596, 1598 (Fed. Cir. 1988) (Citations omitted).

**Rejections Under 35 U.S.C. §103**

Claims 1, 3-8, 10, 11 and 13-15 stand rejected under 35 U.S.C. §103(a) as allegedly being unpatentable over U.S. Patent No. 5,504,432 to Chandler *et al.* in view of taking Official Notice. For a claim to be properly rejected under 35 U.S.C. §103, "[t]he PTO has the burden under section 103 to establish a *prima facie* case of obviousness. It can satisfy this burden only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references." *In re Fine*, *supra*.

It is stated in the Office Action that:

> Chandler et al. disclose an automatic circuit board tester for testing for shorts, opens, and interconnected pins or nodes on a circuit board. The tester first classifies the nodes as being in one of three categories based upon the design of the board and the intended interconnection of the nodes. The categories of nodes are: (1) connected to ground; (2) interconnected to all other nodes in the test group; or (3) isolated from all other nodes. The circuit board tester has a testhead containing a plurality of test channels, each configured to be coupled to a node on the circuit board. The testhead utilizes a digital signal from a digital driver to drive the node at a predetermined voltage and a digital receiver to read the node voltage to determine if it is coupled to ground. Each test channel also includes a switch to connect the digital driver and receiver to the test node as well as a ground switch to selectively couple the node to ground. Various combinations of switch positions and testing sequences enables the circuit board tester to test all node connections and to ensure that the physical embodiment of the circuit board accurately reflects the circuit board design.
>
> In particular, Chandler et al. discloses:
> - connecting the DUT to a testing device (fig. 1-2; col. 3, line 21 to col. 4, line 24);
> - connecting a remote controlling device to the testing device (fig. 1-2; col. 3, line 21 to col. 4, line 24);
> - connecting a communications line (fig. 1-2; col. 3, line 21 to col. 4, line 24);

- establishing a communications link between remote controller and remote controlling device (fig. 1-2; col. 3, line 21 to col. 4, line 24);
- transmitting DUT data to remote controller (fig. 1-2; col. 3, line 21 to col. 4, line 24);
- controlling testing device using input from remote controller (fig. 1-2; col. 3, line 21 to col. 4, line 24);
- initializing, establishing and transmitting data/attribute of DUT (fig. 1-2; col. 3, line 21 to col. 4, line 24);
- forwarding instructions to remote controller and forwarding to testing device (fig. 1-2; col. 3, line 21 to col. 4, line 24);

Chandler et al. do not disclose use of "video cameras"

Official notice is taken that it would have been obvious to one of ordinary skill in the art at the time of the invention to employ video cameras during remote testing of DUTs because this provides other sources of information to the user which would not be as apparent from, for example, only electrical signals. For example, during testing of semiconductor DUTs, a video signal could show smoke, indicating overheating of the DUT.

As mentioned in the previous response, *Chandler et al.* appears to disclose a system for testing a circuit board for short circuits, open circuits, and interconnected pins or nodes in which less than full power is applied to the circuit board to prevent activating semiconductor components on the board. However, *Chandler et al.* fails to disclose, teach, or suggest at least these features of establishing a model of the testing device by electronically obtaining model information from the device under test and the testing device, and transmitting an image of the testing device connections and the model information to the remote controller for analysis, as mentioned above.

Accordingly, Applicants respectfully submit that independent claims 1, 7 and 11 are allowable over the proposed combination of *Chandler et al.* and *Examiner's Official Notice* because the proposed combination fails to render obvious independent claims 1, 7 and 11. Further, Applicants respectfully submit that dependent claims 3-6, 8, 10,

and 13-15 are allowable for at least the reason that they depend from allowable independent claims. *In re Fine*, *supra*.

## CONCLUSION

For at least the foregoing reasons, Applicants respectfully request that all outstanding rejections be withdrawn and that all pending claims of this application be allowed to issue. If the Examiner has any comments regarding Applicants' response or intends to dispose of this matter in a manner other than a notice of allowance, Applicant's request that the Examiner telephone Applicants' undersigned attorney.

Respectfully submitted

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## ANNOTATED VERSION OF MODIFIED CLAIMS TO SHOW CHANGES MADE

In accordance with 37 C.F.R. § 1.121, please find below the amended claims in which the inserted language is underlined ("__") and the deleted language is enclosed in brackets ("[ ]"):

1. (Twice Amended) A method for remote control of a testing device connected to a device under test, the method comprising the steps of:

connecting the device under test to the testing device;

connecting a remote controlling device to the testing device;

connecting a communication link to the remote controlling device;

directing a video camera on the testing device connections to the device under test;

establishing a connection between said remote controlling device to a remote controller on said communication link;

transmitting device under test data to said remote controller;

controlling said testing device using input from said remote controller;

establishing a model of the testing device by electronically obtaining model information from the device under test and the testing device; and

transmitting an image of the testing device connections and the model information to the remote controller for analysis.

7. (Twice Amended) A remote controlling apparatus for remote control of a testing device connected to a device under test, said remote controlling apparatus comprising:

a connection interface between said testing device and said remote controlling apparatus;

a first programmable logic for controlling the testing device and the device under test;

a video camera to provide video images of the testing device and the device under test;

a modem to transmit the video images across a network to a remote controller;

a third programmable logic to establish a model of the testing device by electronically obtaining model information from the device under test and the testing device; and

a transceiver for transmitting an image of the testing device connections and the model information to the remote controller for analysis.

11. (Twice Amended) A remote controlling apparatus for remote control of a testing device connected to a device under test, said remote controlling apparatus comprising:

means for connecting a remote controlling device to the testing device;

means for connecting a communication link to the remote controlling device;

means for directing a video camera on the testing device connections to the device under test;

means for establishing a connection between said remote controlling device to a remote controller on said communication link;

means for transmitting device under test data to said remote controller;

means for controlling said testing device by said remote controller;

means for establishing a model of the testing device by electronically obtaining model information from the device under test and the testing device; and

means for transmitting an image of the testing device connections and the model information to the remote controller for analysis.